

19. **(previously withdrawn-currently amended)** The fabrication process of the optical elements as claimed in claim 1, having single or multiple sequences of processes, wherein each sequence process comprises,

(a) formation of gratings on the top of the substrate using the processes that comprises,

(i) the low or high index material deposition using the vacuum deposition technique;

(ii) photolithography-based patterning;

(iii) dry etching;

(iv) deposition of the high or low index material using the vacuum deposition technique; and

(v) planarization;

(b) deposition of the uniform layer on the top of the said grating ~~as mentioned in the claim 19(a)~~, and;

(c) formation of the said grating ~~as claimed in claim 19(a)~~.

20. **(previously withdrawn -currently amended)** The diffraction grating formation according to ~~mentioned in the~~ claim 19 includes the process of laser drilling or process of gray-scale photolithography mask.

#### **REMARKS**

Examiner and applicant had a conversation on languages and distinguishing of some terms appropriate for the patents application writings. Reconsideration of this application as amended is respectfully requested. Claims 1-6, 12, and 18 have been amended. Claims 19 and 20, previously withdrawn, have been also currently amended and included. The claims amendments are fully supported by the specification or drawings. No new matter has been added. I remarks below are directed the claims to the claims as amended herein.

#### ***Election/ Restrictions***

Claims 1-6, 12, and 18 are corrected as objected by Examiner, Dr. Fayez G. Assaf. Claims 19 and 20 were previously withdrawn have also been currently amended and included.

***Claim Objections***

As objected by Examiner, I corrected the claims 1-6, 12, and 18.

***Claim Rejections-35 U.S.C. § 102(b)***

Claims 1-9 and 15-18 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent US 4,281,894 of Ghua ("Ghua"). I, respectfully submit the claims 1-18 are not anticipated by Ghua.

Claim 1 recites:

An optical element comprising:  
a substrate;  
a first diffraction grating layer comprising with two adjacent dissimilar materials formed on a first plane;  
a second diffraction grating layer comprising with two adjacent dissimilar materials formed on a second plane, and;  
a single uniform layer sandwiched between the said first diffraction grating layer and the said second diffraction grating layer.

Ghua discloses laser beamsampler with a very low absorption (Ghua, Line 1 to 2 of Col. 1), which comprises with a multilayer dielectric coating on a shallow grating, in which the grating is coated with a dielectric of one-half optical thickness, the top surface of which is polished flat (Ghua, Lines 67 to 68 of Col. 1 and Lines 1 to 4 of Col. 2). The polished dielectric is coated with a high reflectivity multilayer dielectric stack which will then follow the flat plan surface of the polished dielectric coating over the grating (Ghua, Lines 4 to 7 of Col. 2). Each of dielectric stacks, Ghua discloses, is made of the same type of material (Ghua, 20 to 26 of FIG. 2, and 50 of FIG. 4), no similar material is used in the single layer. The beamsampler that Ghua discloses is for the beamsampling of very high-power laser beams (Ghua, Lines 22 to 24 of Col. 2). Thus, Ghua, does not disclose

or suggest about the structure of each dielectric layer that is formed with different material, as cited by my claim 1. In addition, Ghua discloses about the sampling of the laser power of the laser beam (coherent), but does not suggest or mention about the wavelength sampling while multiple wavelengths are illuminated, as recited in my claim. In view of this clear distinction, I submit the Claim 1 is not anticipated or rendered obvious by Ghua.

Because claims 2 -9 and 15 -18 depend from and further limit Claim 1, I submits that claims 2-9 and 15-18 also are not anticipated or rendered obvious by Ghua.

Claim 16 recites:

The thickness of the first or second diffraction grating layer and ~~also the~~ said uniform layer, as claimed in claim 1 is either quarter-wavelength or n times quarter-wavelength, wherein n is the integer where  $n=1, 2, 3, 4$  and so on.

I submit that, at least for the reasons given above in reference to Claim 1, Ghua does not disclose or suggest the above-recited limitation, and therefore that Claim 16 is not anticipated or rendered obvious by Ghua. The quarter wavelength thickness mentioned in the Claim 16 is dependent for the structure as claim in 1

### Conclusion

I, Achyut Dutta, respectfully submit that claims 1-18 are in condition for allowance. I (the undersigned inventor) would be obliged to have a telephone interview with the examiner.

A Petition for extension of Time is enclosed herewith.

A check of \$60 is also enclosed for the fee of the extension.

Date

3/3/06

Respectfully submitted,

  
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